

EVALUATING **ACCESSORY STRUCTURES**

SOMEONE WANTS TO BUILD an accessory structure. How can we help them do it without armoring a riverbank (now or in the future), displacing floodwaters, and putting neighbors and roads at risk?

We've included a few tools to help you evaluate these structures:

- ✓ A detailed guide about what accessory structures need to be floodsafe.
- ✓ An adaptable checklist for Administrative Officials to use when reviewing accessory structures.
- ✓ An adaptable questionnaire you can provide to an applicant who wants to build an accessory structure.



This document has several useful links. If you're viewing a printed version, visit bit.ly/VT-accessory-structure see the online version and links to further resources.

The Basics

Anytime someone wants to build something in a River Corridor (RC) or the Special Flood Hazard Area (SFHA), it deserves careful evaluation to make sure it won't put other roads, buildings, and people downstream at risk. This **no adverse impact strategy** ensures that one landowner's choices don't increase the risks for others' property and wellbeing.

What is an accessory structure?

An accessory structure is pretty much any building that isn't a place where someone would live or work; typically a storage shed or a garage. It could be attached to a home or standing on its own. If the structure is built as a living space, it's a residence or an accessory dwelling. We don't cover that review process here but all of the review standards for an accessory structure could apply to a dwelling, along with additional specific requirements. Also, if the structure

ACCESSORY STRUCTURE DEFINITION: A structure which is: 1) detached from and clearly incidental and subordinate to the principal use or structure on a lot, 2) located on the same lot as the principal structure or use, 3) clearly and customarily related to the principal structure or use, and 4) only used for vehicle parking, storage, or primarily building access. Examples include, garages, garden and tool sheds, and playhouses, but do not include accessory dwellings, where someone may live.

is for agricultural use, or is part of an existing Act 250 permitted project, it needs to both comply with local regulations and State rules. Your local regulations may generally exempt some structures like small sheds from review, but these exemptions do not apply in a flood zone.

River Corridors 

Rivers move over time. They erode soil from a bank here and deposit it there. A river corridor is the land area adjacent to a river in which the water may eventually move. River corridors are like invisible boundary lines, determined using river science and mapping. They include the minimum space needed to establish the least erosive path for the water, as well as room for a buffer of vegetation to re-inforce banks and a margin of safety for nearby structures. See all river corridors on the atlas.

Special Flood Hazard Area 

Also referred to as floodplains, these areas are at high risk of flooding. There is at least a 1 in 4 chance of flooding during a 30-year mortgage.

Use your municipal regulations

To evaluate building proposals in your community, use your community hazard and zoning regulations. This guide goes into details related to rivers, streams, and flooding, so there may be additional local requirements that aren't covered here that you still need to apply to a proposal. Your regulations also may not include all of the details below. While accessory structures need to meet your regulations, any topics below that aren't included in your regulations may still be useful guidance for the applicant to build something safe, even if it isn't required.

If your community hasn't adopted a River Corridor protection bylaw, or only has setback standards, consider adopting the [model bylaw](#) to make your community safer and qualify for greater [Emergency Relief and Assistance Funding \(ERAF\)](#). You might also want to review your regulations for development in the SFHA and see if they could be more in line with [model regulations](#). Adopting these bylaws and regulations is important to protect your roads, residents, and the ability for your first responders to reach all areas of your town during a flooding disaster. But it's also a smart legal plan. If a resident can clearly demonstrate that a neighbor's building project was responsible for the flood damage they incurred, that neighbor or the town may be liable for causing the problem.

Avoid Surprises

The worst case scenario in this process is that you find out about the new accessory structure after it's already been built. Ideally, you can have a conversation with the applicant before they've invested any money in site plans, materials, or building. Some residents may not realize they need to talk with the town to begin or they may not want to. It's important to let residents know that they need to apply for permits at the very beginning of the process. Review the [Getting The Word Out](#) component of this module for communication ideas and templates. To remind community members about the process, consider posting a reminder to Front Porch Forum and local newspapers every spring as people are thinking about starting new projects. You could also use the guide below to help applicants put together details on their structure that you'll need for your review and leave copies at the Clerk's office to hand out.

One of the most important things to ensuring these conversations happen early is to be accessible. Make sure your email and phone number is on the town website or is on a card at the Clerk's office. Consider any way you can encourage people to start the conversation at the beginning rather than well into the project.

Is it in the River Corridor or the Floodplain?

The first step is to determine if the structure is proposed within the River Corridor (RC), the Special Flood Hazard Area (SFHA), or anywhere specifically regulated by your community. Start with the [ANR Flood Atlas](#). The RC for the entire state is available here, using these steps:

- Click the Flood Ready Tools button once the Atlas loads.

Get Help



Your [Regional Floodplain Manager](#) is here for you. We want to help you ensure that all development in or near River Corridors and floodplains has no adverse impact on the rest of your community. If you have any questions about how to evaluate something, contact us.

- Click the Find Address option and type in the address. Select the matching address to zoom to the location. If the address isn't available, you can manually zoom to the location.
- Click the Flood Ready Tools button again and click the "Toggle Flood Data On" and the "Toggle River Corridors On" links. The RC displays as a light yellow. The SFHA displays as red or orange (and if you don't see it at a river, read below). If the location is within one of these layers, you'll need to apply regulations appropriate for that area.



What if layers don't display?

You may need to wait a minute for the layers to load or zoom in further. Small streams will have a dotted yellow line. The RC for these streams is measured as fifty feet from the top of the stream bank.

Much of Vermont's SFHA has not been digitized and will not be available in the Atlas. If this is the case for your community, you'll need to use FEMA maps that may be found on the [FEMA website](#) or on paper in your town office. See the [component of this module for using old maps](#) to determine whether or not the structure will be in the SFHA.

Could the zones be wrong?

Yes! Maps could have errors and can be refined to meet local realities. Contact your [Regional Floodplain Manager](#) to discuss any amendments to the RC you feel may be necessary. If the surveyed base flood elevation (BFE) is contrary to the maps, the property owner may apply to FEMA for a [Letter of Map Amendment \(LoMA\)](#).

Structures Proposed for the River Corridor

Rivers change paths, sometimes over decades, sometimes in a day during a storm. The RC is the area that the river may eventually move. Learn more about them on the [Flood Ready site](#). Building in

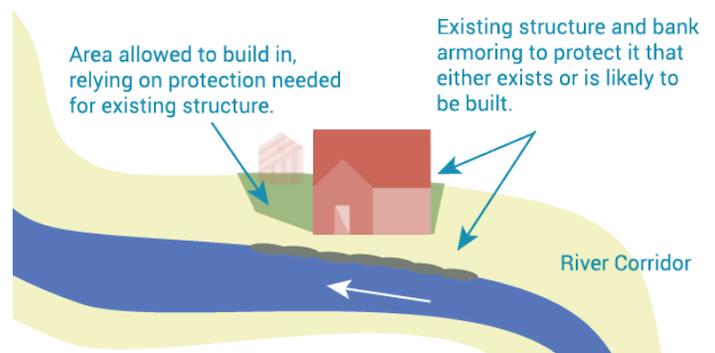
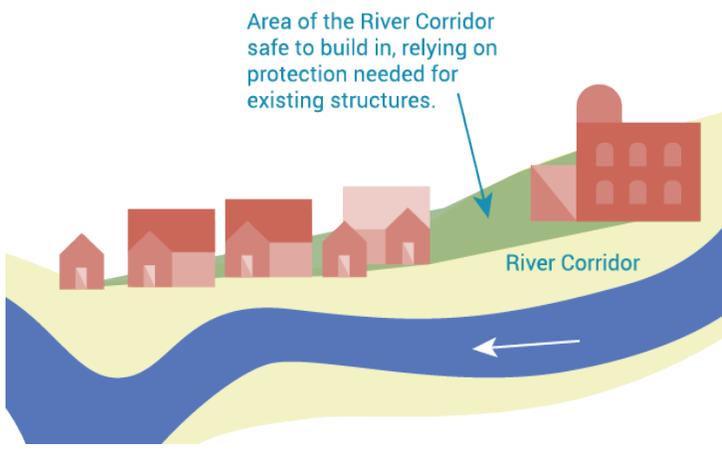
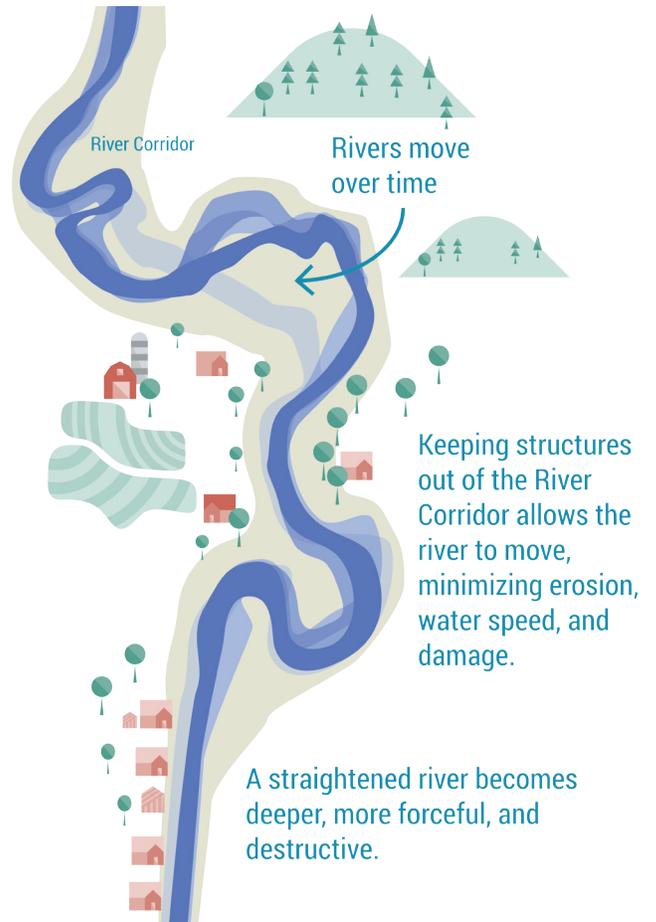
the RC is problematic because the river may eventually move toward the building, eroding the ground underneath it and destabilizing its foundation or washing it away, creating dangerous debris during a flood.

To protect the building, landowners traditionally reinforce the riverbank or streambank, reducing the likelihood that the river could move toward it. Unfortunately, this kind of bank armoring increases the speed of the water by blocking the river from finding the slowest way down the valley. Higher water speed increases erosion and danger downstream. All of these changes can put roads, bridges, and buildings that were previously safe at risk of damage.

Where can we build in the RC?

Ideally, we wouldn't build anything within the RC, especially valuable structures like homes. But a complete halt to all development within the RC isn't always feasible for communities. If you must develop something, do it in a way that won't require additional bank armoring.

Here's what that could look like (see the illustrations below). If a home already exists in the RC, it's reasonable to assume that the homeowner will protect it by reinforcing banks. As long as that protection would also protect the location of the accessory structure, that is a safer place to build. If, however, the location of the proposed structure would require extending the bank protection further to also protect it, it's not an appropriate location. In general, nothing should ever be built in the RC closer to the river or stream than an existing home. If an applicant believes that the site location should not be in the RC because some geological features may prevent the river from moving to that location in the future, connect them with your [Regional Floodplain Manager](#) to set up a site visit and discuss an amendment to the RC.



Structures Proposed for the Special Flood Hazard Area

Building in the SFHA should stay out of the Floodway and it needs to meet the standards for the flood zone.

FEMA provides extensive details for building in the floodplain, and communities need to follow these guidelines as part of their commitment to participate in the National Flood Insurance Program (NFIP), which allows any resident to purchase insurance. **All development projects within the SFHA require a permit that indicates the proposal complies with NFIP. Before that permit is issued, the proposal needs to be reviewed by the Regional Floodplain Manager.** This section covers the basic information you'll want to consider for accessory structures. Keep in mind that your community may have adopted stronger regulations than what the NFIP requires. Consider adapting your own guide by integrating any local regulations with the Accessory Structure Application Review Checklist below.

Floodway



The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. [Learn more at FEMA.](#)

Don't build in the Floodway

The Floodway needs to remain clear so floodwater can move on. Structures built in the Floodway could back up water and cause damage to other structures. They're also at a much higher level of risk. Look for areas on the atlas with diagonal lines to indicate the Floodway. If you rely on paper maps to find your SFHA, you might also have separate Floodway maps. If you don't see the Floodway mapped, check in with your [Regional Floodplain Manager](#).

Determining base flood elevation

You need to determine the base flood elevation (BFE): how high the water is likely to rise during a 100 year flood. You can learn more about determining Base Flood Elevation in the [Working with Zone A Maps and Determining Base Flood Elevation](#) component of this module series.

No fill / no net fill

To have **no adverse impact**, you can't add fill and increase the flood level. The new structure should be placed so as to not displace floodwater. That means no new fill to level or raise the building site or to bring a road or path to the building. Displaced/redirected water has to go somewhere and any new fill added to build this structure will raise the flood level elsewhere, which can put other roads, bridges, and buildings at risk.

In some cases, the applicant may be able to add fill if an equivalent amount of fill is removed from a location close enough to absorb the floodwater that will be displaced by the new fill.

Flood Vents

Water must be allowed to move into any part of the building that is below BFE during a flood to ensure that pressure remains equal, avoiding collapse. If the space below BFE is enclosed, such as a crawl space, or an elevated area dedicated to parking, designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following

minimum criteria:

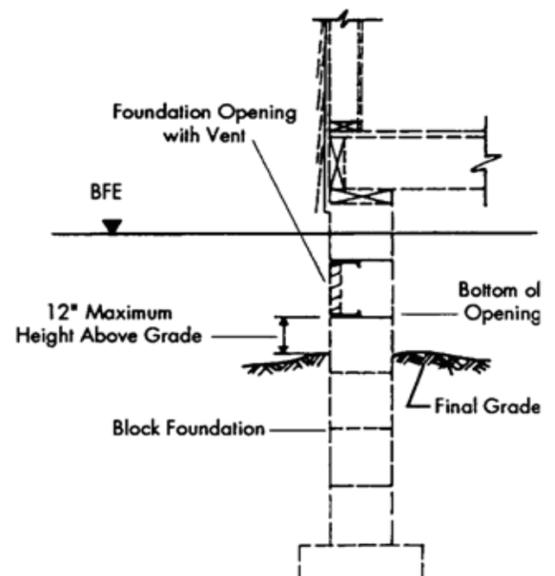
1. Provide at least two openings with a total net area of at least one square inch for every square foot of enclosed area subject to flooding. For example, if the area of the enclosure is 1,000 square feet, the area of the openings combined must total at least 1,000 square inches. Keep in mind that if a grating or vent cover is used, the net opening area must be used for this calculation.
2. Install the openings on at least two walls to ensure they will work in case one gets blocked.
3. The bottom of all openings must be less than one foot above grade. They may be equipped with screens, louvers, valves, or other coverings but must permit floodwater to flow in and out.

Anchoring

The structure must be anchored securely to a permanent foundation so that water can pass in and out without moving it through collapse, force of rushing water, or floatation. You may require the applicant's architect or engineer sign a statement saying that the design of the building includes "anchoring adequate to prevent floatation, collapse and lateral movement" during the base flood.

Flood resistant materials

All parts of the building that could be exposed to floodwaters should be made of flood resistant materials that can withstand floodwater contact for at least 72 hours and require only low-cost cosmetic repair (such as painting) to fix. While NFIP requires the use of these materials up to the BFE, Vermont recommends using them up to two feet above the BFE. A list of appropriate materials can be found on



page 5-44 of the [NFIP Floodplain Management Requirements](#). These are materials like concrete, ceramic tiles, galvanized or stainless steel, indoor-outdoor carpeting, vinyl, stone and slate, pressure treated or naturally decay resistant lumber, and marine grade plywood. Materials like particle board or standard plywood would not be flood resistant.

Utilities

All utilities, including fuel tanks, electrical boxes, switches, and outlets, should be securely mounted/stored above the BFE (ideally two feet above). Only the minimum amount of electrical equipment required by code may be located below the BFE, and that equipment must be flood damage resistant/submersible. And even that should be replaced if it gets flooded. For additional guidance, see [FEMA's guide to Wet Floodproofing Requirements](#) or FEMA's publication on [Protecting Building Utilities from Flood Damage](#).

ACCESSORY STRUCTURE APPLICATION REVIEW CHECKLIST

This checklist is part of a more extensive guide to help you review accessory structures (bit.ly/VT-accessory-structure). Read that first and then adapt this list to fit your municipal regulations so it can help you review applications. Also, **for any development proposed near a river or within 50 feet of a stream, you can always call your Regional Floodplain Manager (bit.ly/flood-managers) to go over the plan. We want to help you ensure new development doesn't increase the risk of flood damage for your residents down stream.**

Adapt This List For Your Use



You can find a Microsoft Word version of this checklist at bit.ly/VT-accessory-structure.

Find the location of the proposed building on the FloodReady Atlas (bit.ly/floodatlas) to determine if it's within a special flood hazard area, Floodway, or a River Corridor.

Under Flood Ready Tools in upper left, turn on River Corridors and Flood Data. You may also want to turn on parcels, found in the main layers that are expanded with the white button in the upper left. Look for ANR Atlas Layers > ANR Basemap Data > Parcels. You should see something like this with the light yellow River Corridor, the red and orange flood hazard areas, and the red parcel lines. If the flood hazard areas are missing, you'll need to reference a FEMA map at msc.fema.gov or in your municipal office.

Then, use the checklist on the next page to evaluate compliance.



Accessory Structure Application Review Checklist

Criteria	Does NOT Pass	Meets Criteria
If the proposed structure is in the Floodway, it must be relocated out of the Floodway.		
IF THE PROPOSED STRUCTURE IS IN THE SPECIAL FLOOD HAZARD AREA:		
Review your local regulation details about new building or renovation in this area. Will this proposal comply? (Consider replacing this checklist item with any local requirements structures must meet that aren't covered below).		
If the lowest floor for an accessory structure is below base flood elevation (BFE), it must have flood vents with the correct size and placement.		
There must be at least two flood vents on at least two walls providing one square inch of opening for every square foot of enclosed space.		
All materials below BFE (and ideally below BFE+24") must be flood resistant.		
All utilities (heating, air conditioning, water, fuel storage, and electrical components) must be securely elevated above flood level.		
This building is effectively anchored so it won't wash away.		
No new fill should be added for this building, the roads around it, or for landscaping. In rare cases, fill may be added if other fill is taken away to compensate.		
IF THE PROPOSED STRUCTURE IS WITHIN A RIVER CORRIDOR:		
What does your local regulation / plan say about new building or renovation in River Corridors and will this building comply? (Consider replacing this checklist item with any local requirements structures must meet that aren't covered below).		
This building should not be closer to the river/stream than existing buildings.		